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IMPLEMENTATION COMPLETION REPORT

REPUBLIC OF KOREA

HEALTH TECHNOLOGY PROJECT

JUNE 28, 1995

Human Resources Operations Division
Country Department I
East Asia and Pacific Region

CURRENCY EQUIVALENTS

Currency Unit - Korean Won (W)

US$1.00 = W788.70 (January 1995)

FISCAL YEAR

January 1 - December 31

WEIGHTS AND MEASURES

Metric System

ABBREVIATIONS

ADB	=	Asian Development Bank
BMA	=	Bureau of Medical Affairs
EMS	=	Emergency Medical Services
ESC	=	Equipment Selection Committee
HMD	=	Hospital Management Division
HSC	=	Hospital Selection Committee
HTP	=	Health Technology Project
ICB	=	International Competitive Bidding
ICR	=	Implementation Completion Report
KHA	=	Korean Hospital Association
LMD	=	Logistics Management Division
MDD	=	Medical Devices Division
MMD	=	Medical Management Division
MOHSA	=	Ministry of Health and Social Affairs
NCD	=	Noncommunicable Disease
NPP	=	Non-profit private
OECF	=	Overseas Economic Cooperation Fund (Japan)
OSROK	=	Office of Supply, Republic of Korea
PCR	=	Project Completion Report
PPAR	=	Project Performance Audit Report

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IMPLEMENTATION COMPLETION REPORT

REPUBLIC OF KOREA

HEALTH TECHNOLOGY PROJECT - Ln. No. 3330-KO

Preface

This is the Implementation Completion Report (ICR) for the Health Technology Project in Korea, for which Ln. No. 3330-KO in the amount of US$60 million equivalent was approved on May 23, 1991 and made effective on October 16, 1991.

The Health Technology Project was closed on December 31, 1994. Final disbursement took place on April 20th, 1995, at which time a balance of US$2.95 million was canceled.

The ICR was prepared by Ms. Sue Szabo of the Human Resources Operations Division of the East Asia and Pacific Region, Country Department I, and reviewed by Mr. Mohammad Farhandi, Acting Project Advisor, Country Department I, East Asia and Pacific Region. The borrower provided comments that are included in Appendix B.

Preparation of this ICR was begun during the Bank's final supervision/completion mission in December 1994. It is based on material in the project file, interviews with Bank staff and consultants involved in the preparation and supervision of the project, interviews with MOHSA staff, and site visitso project hospitals in Korea. The borrower contributed to preparation of the ICR by sending their comments and evaluation on June 9, 1995.

EVALUATION SUMMARY

Introduction.

1. In the late 1980s, the Bank was preparing to reduce its operations in the Republic of Korea anticipating an expected graduation of Korea from Bank lending. The Bank's strategy acknowledged that in the phase-out period, the Government of Korea (GOK) was interested in borrowing for projects which carried with them transfer of technical or analytical expertise, or would fill gaps in technology advancement or research and development programs. Moreover, the social sectors had received less attention, and represented areas where Korea's knowledge and experience lagged behind its general level of development.

2. Prior to the Health Technology Project, the Bank's only other project in the health sector was the Population Project (Ln. 1774-5 KO). This was approved in December 1979 and closed in December 1987, 3½ years behind schedule. The Bank's sectoral knowledge was updated by a health sector report, with special emphasis on insurance (Report No. 7412-KO, June 1989).

Project Objectives.

3. The objectives of the project were: (i) to support the regionalization of service delivery by strengthening technology in key institutions in each of Korea's eight medical regions; (ii) to improve access to modern medical technologies through a better geographic distribution of biomedical equipment; (iii) to improve the efficiency of equipment selection and purchase through a more rational population-based allocation process; and (iv) to strengthen the capability of the Ministry of Health and Social Affairs (MOHSA) to manage the process of allocation and diffusion of medical technologies and to monitor the financial performance of the hospitals selected. The project also allowed the Bank to continue its policy dialogue with the Government of Korea, and to support institutional development of MOHSA, which had overall responsibility for the project.

4. The project concept was consistent with both Bank country strategy and the specific requests of the Korean authorities. Rapid growth, industrialization, and urbanization had changed Korea's mortality profile and shifted the disease burden to largely noncommunicable diseases. The modality of on-lending to private hospitals was also appropriate, responding both to the largely private sector delivery of health services in Korea, and to the interest in the Bank in supporting private sector development.

Implementation Results.

5. The Guidelines for Allocation of Loan Proceeds between components were modified, by agreement of both the Bank and the Borrower. Actual disbursements are given in Table 5.

6. Approximately 4.9 percent of the loan (US$2.95 million) was cancelled. This is a very small percentage, given: (a) the difficulties of forecasting the exact amount of on-lending to individual hospitals in a demand-driven project, and (b) procurement by the Office of Supply, Republic of Korea (OSROK) resulted in cost savings estimated at about 10%, hence reducing the estimated initial cost to each individual hospital.

7. Overall, implementation performance was highly satisfactory and the project procured and distributed biomedical equipment to a total of 81 hospitals. While implementation was somewhat slow initially, this was partly due to factors beyond the control of MOHSA and not unreasonable

given the demand-driven nature of the project. Both the Bank and the borrower showed flexibility during the implementation process, allowing later progress to be described as "significant and satisfactory".

Summary of Findings, Future Operations, and Key Lessons Learned.

8. Project outcome is satisfactory and its achievements sustainable. The project was innovative in that it involved MOHSA on-lending to private hospitals at a non-subsidized rate, and that a negative list of equipment to some extent responded to equity concerns.

9. The project was largely an equipment procurement operation focused on priority needs, with institutional strengthening of the Medical Management Division (MMD) and the Medical Devices Division (MDD). The project achieved its stated objectives: (a) it supported the regional distribution of medical technologies in the eight medical regions; (b) the project was successful in procuring and distributing equipment to 81 hospitals maintaining a geographical balance according to regional population density; and (c) equipment was selected using an Equipment Selection Committee and was purchased through the central OSROK yielding better prices. In addition, the project opened the way for a successor project which addressed health sector policy issues in health care financing and cost containment.

10. The project had a straightforward design and was implemented satisfactorily. Thus there are no major lessons to be learned. However, several observations are pertinent:

(a) The procurement of equipment under ICB procedures by an efficient procurement agency (OSROK) resulted in savings of about 10% in total equipment costs.

(b) The training component, while small, was not implemented. This did not affect the outcome of the project but greater effort should have been made to ensure that the component was actually implemented.

(c) Lending to hospitals, rather than grant financing or outright donation of equipment, may carry a greater incentive for hospitals to ensure proper maintenance of equipment.

A. Project Objectives

Agreed Objectives

1. The objectives of the project were: (i) to support the regionalization of service delivery and the referral system by strengthening the technology in key institutions in each of Korea's eight medical regions; (ii) to improve access to modern medical technologies through a better geographic distribution of biomedical equipment; (iii) to improve the efficiency of equipment selection and purchase through a more rational population-based allocation process; and (iv) to strengthen the capability of the Ministry of Health and Social Affairs (MOHSA) to manage the process of allocation and diffusion of medical technologies and to monitor the financial performance of the hospitals selected, thereby setting an example for improved financial management of hospitals in the private sector.

2. The project also allowed the Bank to continue its policy dialogue with the Government of Korea (GOK), and to support institutional development of MOHSA, which had overall responsibility for the project.

3. The project had three components: (a) Non-communicable disease (NCD) specialty units in large referral hospitals; (b) Secondary care hospitals; and (c) Emergency medical services. In each of these components, biomedical equipment was to be added and replaced, thereby achieving project objectives. Beneficiary hospitals were to finance complementary inputs for civil works to house the equipment, installation costs, maintenance and consumables related to the equipment, training of operators and technicians, and contingencies. Project cost was estimated at US$81.2 million, to be financed by a Bank loan of US$60 million and local financing, by participating hospitals, of US$21.2 million.[1]

Evaluation of Objectives.

4. Rapid growth had shifted Korea from a typical developing country health profile of high fertility/high mortality and prevalence of infectious and parasitic diseases, to a developed country profile of noncommunicable chronic and degenerative diseases. The project responded to a need for the Korean health sector to adapt to these changes in an equitable manner. This overall concept was sound. Discussions for the project had begun in December 1989 (see Table 3 for complete timetable). Korean authorities had approached the Bank for assistance in meeting the increasing demand by health professionals and patients for greater technological sophistication in the provision of medical care

5. The overall concept was also consistent with Bank country strategy. At the time (1989), the Bank was preparing for Korea's graduation from Bank lending. Korea was the only newly industrializing country in East Asia where the Bank remained active. Bank staff would be given the opportunity to help adapt and apply developed country experience, and lessons could later be employed in other borrowing countries. The Bank's strategy also acknowledged that the GOK was interested in borrowing for projects which carried with them transfer of technical or analytical expertise, or would fill gaps in technology advancement or research and development programs. The social sectors had received less attention, and represented areas where Korea's knowledge and experience lagged behind its general level of development. Moreover, the GOK showed

[1] Appraisal estimates, including contingencies, are given in Tables 6A and 6B.

commitment to develop the health sector and had previously borrowed form OECF, IBRD, ADB and KfW for hospital improvement.

6. Support to the private sector, by placing investments in selected non-profit private (NPP) hospitals, was appropriate, given that:

(a) health care services are mostly delivered by the private sector. In 1989, private clinics and hospitals employed 72% of physicians and 55% of nurses, managed 80% of hospital beds, and accounted for 73% of total health sector expenditures. Not-for-profit hospitals accounted for about 60% of the beds, with average size of 240 beds;

(b) the on-lending design had been successful in a previous project. A revision in the original design of the Korea Population Project (Ln. 1774-5 KO) had resulted in part of project funds being on-lent to private non-profit hospitals. The PCR (No. 8114, April 1989) rated project performance satisfactory, and the PPAR (No. 8895, June 1990) commented favorably on the project redesign;

(c) preparation studies examined the equipment leasing market and commercial bank market, and determined that there was insufficient capacity and/or unwillingness to provide their services to the hospital sector;

(d) although concerned to promote greater equity, in 1989 the GOK was facing increasing financial pressures from the appreciation of the won, and expanding budgetary outlays for accelerated social sector programs;

(e) the Bank loan was to finance investment costs, with operational costs left to private hospitals; and

(f) within the Bank, there was increasing focus on the support of private sector development, and in this regard the project was innovative because of its concentration on the private health sector.

B. Implementation Experience and Results

Implementation Record and Major Factors Affecting the Project

7. Overall, implementation performance was highly satisfactory. The loan agreement became effective October 16, 1991. Beneficiary hospitals and their proposed equipment were selected by independent review committees. The Hospital Selection Committee and Equipment Selection Committee had been established and their respective members appointed, satisfactory to the Bank, by the time of Board presentation. Agreements were reached during negotiations as to the criteria to be used for selection of hospitals and for equipment (Annexes 9 and 12 of the SAR). Participating hospitals were to take on the full conditions of the Bank loan, including the foreign exchange risk, by signing sub-loan agreements with MOHSA. MOHSA had sent invitations to apply for sub-loans to all private hospitals in January 1991, and subsequently extended the closing date until September 15, 1991.

8. MOHSA played an intermediary role between the hospitals and equipment suppliers in two ways: (i) the Medical Devices Division (MDD)[2] ensured that hospital equipment requests, once approved by the ESC, were sent to the Office of Supply, Republic of Korea (OSROK) and processed; and (ii) the Medical Management Division (MMD)[3] checked the financial status of the applying hospitals, and arranged sub-loan agreements, including the collateral and repayment schedules of individual hospitals. These arrangements worked smoothly, with full cooperation from all parties.

9. As required, MOHSA submitted semi-annual progress reports to the Bank, and status reports were presented to visiting missions. The performances of the independent review panels for selecting hospitals and equipment were satisfactory, with criteria and guidelines for selection being followed.

10. The project succeeded in procuring and distributing biomedical equipment to a total of 81 hospitals. A sample of bid evaluation reports at OSROK was evaluated during supervision missions and no irregularities found in awarding contracts.

11. Initially, however, implementation was somewhat slow, and disbursements well behind schedule (see Table 9). Various factors were involved:

(a) MOHSA staff working on this project had no previous experience with Bank projects. While some of the familiarization with Bank procedures had been accomplished during preparation, this still affected initial implementation, and was compounded by language barriers;[4]

(b) Some hospitals did not meet project requirements, or were unable to fulfill security submission requirements. Their removal slowed implementation, but showed that HSC was able to mitigate project risk by their removal;

(c) There were some difficulties in getting enough hospitals for component C. Some hospitals also partially withdrew by asking for a smaller loan, which increased the unallocated portion of the loan when well into the implementation period;

(d) To some extent, demand from private hospitals was lowered by the growing market for leasing medical equipment.

12. Factors (b) - (d) were beyond the control of MOHSA, given the demand-driven nature of the project. They were dealt with in a flexible manner, however, by both the Bank and the Borrower. Without sufficient demand in component C, some hospitals were instead chosen from a waiting list and some of loan proceeds allocated to components A and B. The Bank agreed that Guidelines for Allocation of Loan Proceeds between components, as stated in the SAR, were adjusted accordingly. Table 5 shows actual disbursements. The substitution of hospitals was a key factor allowing later progress to be described as "significant and satisfactory".

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2 Until April 1994, called the Logistics Management Division (LMD).

3 Until April 1994, called the Hospital Management Division (HMD).

4 The experience with this project later minimized the start-up costs of the Public Hospital Modernization Project.

13. Tables 5, 6A, and 6B provide information on actual costs compared to appraisal estimates. In two cases under components B and C, the ceilings on individual hospital were exceeded, by $300,000, with the concurrence of the Bank. It also should be noted that both the SAR and actual figures under "transportation, operations, and consumables", financed by beneficiary hospitals, are estimates. Hospitals were not required to inform MOHSA of the exact cost of their complementary inputs, and so data are not available.

14. The only part of the project not implemented was training[5]. However the resources allocated to this component (US$6,126) were so insignificant that project outcome was not affected. MOHSA staff received assistance during project preparation (para.16), and through advice from supervision missions. No training was given to hospital representatives; however, hospital operations appeared sufficiently sophisticated to make training unnecessary, nor did its omission appear to affect project implementation negatively.

15. Approximately 4.9 percent of the loan (US$2.95 million) was cancelled. This is a very small percentage, given: (a) the difficulties of forecasting the exact amount of on-lending to individual hospitals in a demand-driven project, and (b) procurement by OSROK under ICB procedures resulted in cost savings estimated at about 10%, hence reducing the estimated initial cost to each individual hospital. In addition, the unexpected growth of the equipment leasing market, linked to Korea's rapid economic growth, was another factor which reduced hospital demand for loans. MOHSA's actions to reallocate available funds were commendable, and key to keeping total disbursements close to the $60 million loan amount.

C. Bank Performance

16. During preparation, missions spent significant amounts of time to help familiarize their Korean counterparts in Bank procedures. A training session was organized for the MOHSA technical team, in which the procedures for procurement and disbursement, financial matters (audits, SOEs), data collection, and monitoring and evaluation were explained and reviewed. A financial analyst assisted with the onlending feature of the project.

17. Supervision missions began 3 months after signing, and took place twice a year. A total of 8 staff weeks was spent on supervision, of which 5 were in the field (Tables 8 and 9). While supervision resources were less than those written into the SAR,[6] they were adequate for monitoring implementation progress and solving problems. For example, when implementation was behind schedule, supervision missions provided assistance on a more flexible use of various disbursement and procurement procedures. A detailed list of actions was proposed to overcome delays and allow close to full commitment of the loan, ensuring that both MOHSA and OSROK appreciated the need for special actions. However, staff weeks allocated for supervision were insufficient to allow site visits to hospitals, which were not undertaken until the final completion mission.

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5 "Seminars on loan management and domestic procurement would be conducted by KHA in conjunction with MOHSA for representatives of the selected hospitals in 1991... seminars for equipment managers...on the subjects of domestic procurement issues such as transportation, insurance, customs clearance and surveyors clearance" (SAR, p.14).

6 The SAR stated that "supervision would be carried out by the Task Manager (Public Health Specialist) accompanied once a year by a biomedical equipment specialist and once a year by a procurement specialist".

D. Borrower Performance

18. The project was well prepared by a MOHSA Task Force, and working relations were described as excellent. MOHSA staff fully cooperated with Bank staff, provided all assistance requested of them, and were very responsive to Bank advice. Background information and required drafts of selection criteria and sub-loan agreements were provided on time. A Project Implementation Unit was established, as well as a Hospital Selection Committee and an Equipment Selection Committee.

19. MOHSA tried to maximize utilization of loan proceeds by proceeding rapidly with selection of private hospitals. MOHSA made efforts to minimize the time taken by procurement procedures by informing newly selected hospitals to prepare equipment lists even before sub-loan agreement signing, and by sending procurement requests to OSROK more quickly. OSROK staff cooperated fully in extending assistance to MOHSA to help achieve the objective of full utilization of loan proceeds.

E. Achievement of Project Objectives

20. The project achieved its stated objectives: (a) it supported the regional distribution of medical technologies in the eight medical regions; (b) it was successful in procuring and distributing equipment to 81 hospitals maintaining a geographical balance according to regional population density; (c) equipment was selected using an Equipment Selection Committee and was purchased through the central OSROK yielding better prices; and (d) it contributed to institutional strengthening of the Medical Management Division (MMD) in equipment identification, prioritization and procurement, and the Medical Devices Division (MDD) in reviewing the financial status of project hospitals..

21. Available data show a fairly wide regional distribution of project benefits (Tables 10A/B/C), particularly true of Components B and C. Visits to two hospitals during the completion mission also provided evidence of the high equipment utilization rates. Hospital administrators expressed great satisfaction with the equipment.

22. The objective of institutional strengthening of MOHSA was achieved. The divisions responsible for implementing the project (MMD and MDD) were effective and efficient (paras.18, 19).

23. Policy dialogue was not one of the four formal objectives recorded in the loan agreement, but was mentioned in the SAR as an important goal.[7] While this goal was not operationalized through project design, for example through the inclusion of studies, the project prepared the way for the Public Hospital Modernization Project (Ln. 3516-KO, June 1992) in which broader sector issues are addressed and a number of detailed research studies are underway.[8]

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[7] Financing issues were particularly relevant since all of the procedures using project equipment were supposed to be reimbursable under Korea's medical insurance system, participation in which became mandatory for all citizens from July 1, 1989.

[8] Four studies focus on: econometric modelling of optimal distribution of medical resources; national health expenditures; alternatives to the fee-for-service method; and impact of National Health Insurance on Government policy objectives of equity, cost and quality.

F. Project Sustainability

24. Sustainability is an issue for both the private hospitals which borrowed under the project, and for MOHSA. Sustainability for the hospitals is highly likely. There is adequate and timely availability of spare parts and maintenance for hospitals to keep the new equipment functioning. All of the procedures using the equipment are reimbursable under the national health insurance. So far, the foreign exchange risk to hospitals of holding dollar-denominated loans is minimal. However, it should be noted that a prior OECF project had lent to private hospitals in yen, which later caused hardship when the yen appreciated significantly against the won.

25. The main risk to MOHSA identified in the project is that of default by hospitals on their sub-loan agreements. With sub-loan agreements including 5 years grace on repayment of principal and a 10 year repayment period, the importance of this factor will only be ascertained over time. However, a number of project design elements mitigate this risk:

(a) MMD required financial statements demonstrating financial soundness of applicant hospitals, which would have deterred more risky hospitals from applying;

(b) hospitals were required to mortgage their assets to MOHSA, as collateral for their loans; and

(c) MMD will continue to regularly monitor project hospitals, requiring them to provide yearly financial statements, which would alert MMD to any impending problems.

26. Moreover, interest payments from hospitals became due as soon as loans were effective. MMD reported that all due interest payments had been made on time.

27. A wider sustainability issue relates to the increasing medical insurance payments which in part are generated by new medical technologies.[9] Since project hospitals were only a small part of the total non-profit private hospitals (see Tables 10A/B/C), the incremental impact would be marginal. The various studies financed under the Public Hospital Modernization Project will clarify policy options on some of these issues.

G. Assessment of Outcome

28. Project outcome can be considered satisfactory. Hospitals appear to be satisfied with the equipment purchased, and with MOHSA handling of sub-loans and procurement through OSROK. The SAR stressed the objective of equitable access to quality medical care. This was partly built into project design: the risk that mainly affluent Koreans would benefit from improved technology was mitigated by excluding 5 highly sophisticated equipment items, used for procedures that were not reimbursable through national medical insurance. The equipment selection criteria also tried to build in regional distribution among the 8 medical regions. However, equity issues, in terms of

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[9] Medical insurance payments as a percentage of the MOHSA budget increased from 12.5% in 1983 to 37% in 1990.

reaching the poor, were more directly addressed in the Public Hospital Modernization Project, which followed in June 1992.[10]

29. It is not clear to what extent project funds substituted for funds already available from domestic capital markets. A premise of the SAR was that " bankers...are reluctant to lend to hospitals...hospitals located in less favorable socioeconomic areas and in smaller cities and towns are more capital-constrained" (p.9). However, application for project financing was no greater among hospitals outside Seoul than from those within (Tables 10A/B/C) The two hospitals visited in Seoul had easy and frequent access to bank funding. The most likely conclusion is that project funds presented an alternative source of finance for hospitals, which had various advantages and disadvantages when compared to bank financing (para.28). Also, the justification in providing long-term loans where the market would lend only short- to medium-term is less compelling in practice, since short-term borrowing could also be used to finance leased equipment. It is also likely that the sophistication of private hospitals had already superseded the need for the project to help in "setting an example for improved financial management of hospitals in the private sector".[11]

H. Summary of Findings, Future Operations, and Key Lessons Learned

30. Project implementation was satisfactory, and its achievements appear sustainable. The project was innovative in that it involved MOHSA on-lending to private hospitals at a non-subsidized rate, and that a negative list of equipment to some extent responded to equity concerns.

31. The project was largely an equipment procurement operation, with institutional strengthening of MMD and MDD. The project achieved its stated objectives: (a) it supported the regional distribution of medical technologies in the eight medical regions; (b) the project was successful in procuring and distributing equipment to 81 hospitals maintaining a geographical balance according to regional population density; and (c) equipment was selected using an Equipment Selection Committee and was purchased through the central OSROK yielding better prices. In addition, the project opened the way for a successor project which addressed health sector policy issues in health care financing and cost containment.

32. The private hospital sector in Korea five years later and six years after implementation of National Health Insurance appears sufficiently developed to access capital markets such that a similar lending operation would now affect it in only a marginal way. However, the on-lending approach may be replicable in other countries.

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[10] The SAR for the latter project notes that "the poor have traditionally sought medical care at public facilities, and continue to do so out of habit, and because private hospitals have no financial incentives for serving the poor". About 7.5% of the population, some 3.2 million people, are classified as poor or medically indigent and are not covered by National Health Insurance. The distribution of the ten public hospitals chosen in this project is much different than the distribution in the Health Technology Project; notably, no loans go to the medical regions containing Seoul and Pusan.

[11] Included in the formal objectives of the SAR (no. (iv)). It was argued that this would overcome the lack of transparency of foundations, which in turn reduced their access to financial markets.

33. The project had a straightforward design and was implemented satisfactorily. Thus there are no major lessons to be learned. However, several observations are pertinent:

(a) The procurement of equipment under ICB procedures by an efficient procurement agency (OSROK) resulted in savings of about 10% in total equipment costs.

(b) The training component, while small, was not implemented. This did not affect the outcome of the project but greater effort should have been made to ensure that the component was actually implemented.

(c) Lending to hospitals, rather than grant financing or outright donation of equipment, carries with it a greater incentive for hospitals to ensure proper maintenance of equipment.

Table 1: Summary of Assessments

A. Achievement of objectives	Substantial	Partial	Negligible	Not applicable
Macro policies				x
Sector policies				x
Financial objectives		x		
Institutional development		x		
Physical objectives	x			
Poverty reduction				x
Gender issues				x
Other social objectives				x
Environmental objectives				x
Public sector development				x
Other - Private sector development		x		
B. Project sustainability	Likely	Unlikely	Uncertain	
	x			
C. Bank performance	Highly Satisfactory	Satisfactory	Deficient	
Identification	x			
Preparation assistance	x			
Appraisal	x			
Supervision	x			
D. Borrower performance	Highly Satisfactory	Satisfactory	Deficient	
Preparation	x			
Implementation	x			
Covenant compliance	x			
Operation (if applicable)	x			
E. Assessment of outcome	Highly satisfactory	Satisfactory	Unsatisfactory	Highly unsatisfactory
		x		

Table 2: Related Bank Loans/Credits

Loan/credit title	Purpose	Year of approval	Status
Preceding operations			
Population Project (Ln. 1774-5-KO)	Reduce fertility and infant and maternal mortality, particularly in rural areas.	1979	Closed Dec. 31, 1987. Fully disbursed.
Following operations			
Public Hospital Modernization Project (Ln. 35160-KO)	Improve quality of medical care in public hospitals; increase access of poor; training.	1992	Ongoing

Table 3: Project Timetable

Steps in project cycle	Date planned	Date actual/latest estimate
Identification (Executive Project Summary)		1/29/90
Preparation	02/90	02/90 - 10/90
Appraisal	10/90 - 11/90	12/90
Negotiations	01/91 - 02/91	04/91
Board presentation	05/23/91	5/23/91
Signing	07/91	7/19/91
Effectiveness	10/91	10/16/91
Project Completion	06/30/94	06/30/94
Loan closing	12/31/94	12/31/94

Table 4: Loan/Credit Disbursements: Cumulative Estimated and Actual

(US$ thousands)

	FY 92	FY 93	FY 94	FY 95
Appraisal estimate	6.5	27.5	57.0	60.0
Actual	6.0	13.5	45.3	57.0
Actual as % of estimate	92.3%	49.1%	79.5%	95%
Date of final disbursement				4/20/95

Table 5: Key Implementation Indicators

Key Implementation Indicators	Estimated	Actual
Component A -- NCD Hospital selection - number of sub-loans signed	15-30	13 as % of eligible (85): 15%
Equipment procurement: Component total Ceiling for individual hospital	 $20 M $1.5 M	 $18.7 M $1.2 M - 1.47 M
Transportation, operations and consumables (*)	$4.2 M	$4.2 M
Component B -- NPP Hospital selection - number of sub-loans signed	20-30	40 as % of eligible (206): 19%
Equipment procurement: Component total Ceiling for individual hospital	 $20 M $1.0 M	 $25.6 M $220,000 - $1.3 M (**)
Transportation, operations and consumables (*)	$4.2 M	$4.2 M
Component C -- EMS Hospital selection - number of sub-loans signed	20-30	28 as % of eligible (79): 35%
Equipment procurement: Component total Ceiling for individual hospital	 $20 M $1.0 M	 $12.7 M $110,000 - $1.3 M (***)
Transportation, operations and consumables (*)	$4.2 M	$4.2 M
Training Hospital Representatives Training Financing and/or Equipment Manager Training	 50 persons 50 persons	 none none

(*) It should be noted that both the SAR and actual figures under "transportation, operations, and consumables", financed by beneficiary hospitals, are estimates. Hospitals were not required to inform MOHSA of the exact cost of their complementary inputs, and so data are not available.

(**) One hospital was above the loan ceiling. Its initial allocation of $700,000 was later increased to $1.3 million.

(***) One hospital was above the loan ceiling. Its initial allocation of $1 million was later increased to $1.3 million.

Table 6A: Project Costs

	Appraisal estimate (US$ Million) (costs including contingencies)			Actual/latest estimate (US$Million)		
Item	Local costs	Foreign costs	Total	Local costs	Foreign costs	Total
Equipment	-	67.1	67.1	-	57.0	57.0
Transportation and installation	3.7	0.3	4.0	3.7	0.3	4.0
Operation, maintenance and training	4.3	0.4	4.7	4.3	0.4	4.7
Consumable materials	4.9	0.5	5.4	4.9	0.5	5.4
Total Project Costs	12.9	68.3	81.2	12.9	58.2	71.1

Note: both the SAR and actual figures under "transportation, operations, and consumables", financed by beneficiary hospitals, are estimates. Hospitals were not required to inform MOHSA of the exact cost of their complementary inputs, and so data are not available.

Table 6B: Project Financing

	Appraisal estimate (US$M)			Actual/latest estimate (US$M)		
Source	Local costs	Foreign costs	Total	Local costs	Foreign costs	Total
IBRD	-	60.0	60.0	-	57.0	57.0
Domestic contribution (private hospitals)	13.0	8.2	21.2	12.9	1.2	14.1
TOTAL	13.0	68.2	81.2	12.9	58.2	71.1

Note: both the SAR and actual figures under "transportation, operations, and consumables", financed by beneficiary hospitals, are estimates. Hospitals were not required to inform MOHSA of the exact cost of their complementary inputs, and so data are not available.

Table 7: Status of Legal Covenants
Korea
Health Technology Project

Agreement	Section	Covenant type	Status	Original Fulfillment date	Revised Fulfillment date	Description of Covenant	Comments
Loan 3330-KO	3.01(b)	M	OK	-	-	Carry out the project in accordance with the Implementation Program in Schedule 5	Fulfilled
	4.01	F	OK	06/30/91	-	Furnish to the Bank audit report containing a separate opinion on SOEs not later than June 30 of each year	No Expenditure in CY 1991
				06/30/93			No Expenditure in CY 1992
				06/30/94			Received 7/20/94

Table 8: Bank Resources: Staff Inputs

Stage of project cycle	Planned		Revised		Actual	
	Weeks	US$000	Weeks	US$000	Weeks	US$000
Through appraisal	15.0	8.3	45.0	33.1	46.0	0.0
Appraisal-Board	29.0	18.1	14.0	1.6	11.4	0.0
Supervision	19.0	26.1	17.0	22.6	8.0	3.3
Completion (*)	10.0	42.2	9.5	34.8	3.7	10.4
TOTAL	73.0	94.7	85.5	92.1	69.1	13.7

(*) Note: Dollar costs for completion appear high because they include the salary and benefit costs of staff involved in the project. This change in cost calculations was made July 1, 1994.

Table 9: Bank Resources: Missions

Stage of project cycle	Month/year	Number of persons	Days in field	Specialized staff skills represented	Performance Rating		Types of problems
					Implementation	Development objectives status	
Through appraisal	12/89	2	6	HPE PRO	-	-	-
	2/90 - 3/90	4	19	HPE PRO FNA EGR	-	-	-
	7/90	2	5	HPE PRO	-	-	-
	9/90	3	17	HPE PRO FNA	-	-	-
Appraisal through Board approval	12/90	1	4	HPE	-	-	-
					-	-	-
Supervision	11/91	1	3	PRO	1	1	disbursement lag 100%
	5/92 - 6/92	1	4	PRO	1	1	disbursement lag 5% proj. mgmt. perf. = 2 procurement perf. = 2
	11/92	1	4	PRO	1	1	disbursement lag 64% financial perf. = 2
	5/93	1	4	PRO	1	1	disbursement lag 51% financial perf. = 2
	11/93	1	4	PRO	1	1	
	5/94	1	4	PRO	1	1	disbursement lag 17%
Completion	12/94	2	4	PRO ECN	HS	HS	

Table 10A
Regional Distribution of Project Activities
Component A: Non-communicable Disease Units

			Total hospitals		Eligible Hospitals		Project Hospitals	
Medical Region	City	Population Weight (%)	Number	% of total	Number	% of total	Number	% of total
Kyung In	Seoul	25.1	182	26.4	34	29.8	5	38.5
(43.3 %)	Kyung Ki	13.1	83	12.1	12	10.5	1	7.7
	Inchon	3.9	20	2.9	7	6.1		
	Cheju	1.2	7	1.0	1	0.9		
Kyung Nam	Pusan	9.0	73	10.6	12	10.5	2	15.4
(17.5 %)	Kyung Nam	8.5	63	9.2	10	8.9		
Kyung Buk	Kyung Buk	6.6	42	6.1	10	8.9	2	15.4
(11.8 %)	Daeku	5.2	31	4.5	5	4.4		
Chon Nam	Chon Nam	5.8	42	6.1	2	1.7		
(8.6 %)	Kwangju	2.8	29	4.2	4	3.5		
Chung Nam	Chung Nam	4.5	25	3.6	3	2.6	1	7.6
(7.0 %)	Daejeion	2.5	18	2.6	3	2.6		
Chon Buk	Chon Buk	4.9	23	3.3	3	2.6		
(4.9 %)								
Kang Won	Kang Won	3.8	29	4.2	5	4.4	2	15.4
(3.8 %)								
Chung Buk	Chung Buk	3.1	22	3.2	3	2.6		
(3.1 %)								
Total		100.0	689	100.0	114	100.0	13	100.0

Table 10B
Regional Distribution of Project Activities
Component B: Secondary Care Hospitals

			Total hospitals		Eligible Hospitals		Project Hospitals	
Medical Region	City	Population Weight (%)	Number	% of total	Number	% of total	Number	% of total
Kyung In	Seoul	25.1	182	26.4	36	21.7	11	27.5
(43.3 %)	Kyung Ki	13.1	83	12.1	21	12.7	2	5.0
	Inchon	3.9	20	2.9	6	3.6	1	2.5
	Cheju	1.2	7	1.0	2	1.2		
Kyung Nam	Pusan	9.0	73	10.6	24	14.5	5	12.5
(17.5 %)	Kyung Nam	8.5	63	9.2	19	11.4	6	15.0
Kyung Buk	Kyung Buk	6.6	42	6.1	8	4.8	3	7.5
(11.8 %)	Daeku	5.2	31	4.5	8	4.8		
Chon Nam	Chon Nam	5.8	42	6.1	15	9.0	3	7.5
(8.6 %)	Kwangju	2.8	29	4.2	2	1.2		
Chung Nam	Chung Nam	4.5	25	3.6	4	2.4		
(7.0 %)	Daejeion	2.5	18	2.6	3	1.8	2	5.0
Chon Buk	Chon Buk	4.9	23	3.3	4	2.4	3	7.5
(4.9 %)								
Kang Won	Kang Won	3.8	29	4.2	7	4.2	3	7.5
(3.8 %)								
Chung Buk	Chung Buk	3.1	22	3.2	7	4.2	1	2.5
(3.1 %)								
Total		100.0	689	100.0	166	100.0	40	100.0

Table 10C
Regional Distribution of Project Activities
Component C: Emergency Medical Services

			Total hospitals		Eligible Hospitals		Project Hospitals	
Medical Region	City	Population Weight (%)	Number	% of total	Number	% of total	Number	% of total
Kyung In	Seoul	25.1	182	26.4	52	21.3	7	25.0
(43.3 %)	Kyung Ki	13.1	83	12.1	26	10.7	3	10.7
	Inchon	3.9	20	2.9	11	4.5	1	3.5
	Cheju	1.2	7	1.0	4	1.6		
Kyung Nam	Pusan	9.0	73	10.6	19	7.8	1	3.5
(17.5 %)	Kyung Nam	8.5	63	9.2	18	7.4	2	7.2
Kyung Buk	Kyung Buk	6.6	42	6.1	19	7.8	3	10.7
(11.8 %)	Daeku	5.2	31	4.5	10	4.1	1	3.5
Chon Nam	Chon Nam	5.8	42	6.1	20	8.2	2	7.2
(8.6 %)	Kwangju	2.8	29	4.2	6	2.5	2	7.2
Chung Nam	Chung Nam	4.5	25	3.6	13	5.3	1	3.6
(7.0 %)	Daejeion	2.5	18	2.6	7	2.9		
Chon Buk	Chon Buk	4.9	23	3.3	12	4.9	1	3.6
(4.9 %)								
Kang Won	Kang Won	3.8	29	4.2	16	6.6	1	3.6
(3.8 %)								
Chung Buk	Chung Buk	3.1	22	3.2	11	4.5	3	10.7
(3.1 %)								
Total		100.0	689	100.0	244	100.0	28	100.0

REPUBLIC OF KOREA

Health Technology Project under Loan 3330-KO
Public Hospital Modernization Project under Loan 3516-KO

IBRD Progress Review Mission

Nov. 14 - Dec. 10, 1994

AIDE MEMOIRE[1]

1. An IBRD Mission[2] visited Korea during Nov. 14 - Dec. 10, 1994 to review implementation progress of nine projects. This Aide Memoire deals only with Loans 3330-KO and 3516-KO under the Ministry of Health and Social Affairs (MOHSA).

2. The mission visited the Treasury Division, Treasury Bureau, Ministry of Finance (MOF); the Medical Affairs Bureau (MAB) of MOHSA; the Medical Management Division (MMD), MAB, MOHSA; two private hospitals and Division III, Foreign Procurement Bureau, Office of Supply, Republic of Korea (OSROK). The staff of the Medical Devices Division, MAB, MOHSA joined the visit to OSROK. The mission wishes to record its thanks to all the officials met and for their kind assistance and generous hospitality.

3. Progress of implementation of both projects is satisfactory. Procurement and disbursements have improved. Bid evaluation reports were sample checked at OSROK and there were no irregularities. Statement of Expenditures (SOEs) and supporting vouchers were also sample checked at MOHSA, also with no irregularities. Both Loan Agreements are in full compliance, including timely submission of audit reports.

Health Technology Project under Loan 3330-KO.

4. MOHSA has completed the task of allocating all the loan proceeds (US$60 million) to 81 hospitals with full compliance to the Loan Agreement dated July 19, 1991 and the Staff Appraisal Report No. 9280-KO dated April 24, 1991. Procurement of

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[1] The views expressed in this Aide Memoire are subject to the review of IBRD management.

[2] The mission comprised Mr. Willy De Geyndt, Principal Health Specialist, Sing Zak Sung, Consultant and Ms. Susan Szabo, Economist.

equipment would reach about $57.4 million by the present Closing Date, Dec. 31, 1994. MOHSA plans to let the unused loan fund of about $2.6 million be cancelled.

5. The mission pointed out that in Annex 1 to the last Aide Memoire dated May 21, 1994, MOHSA has been advised that MOHSA can still use procurement procedures other than ICB, such as the "Shopping" procedure between now and the Closing Date to make more purchases and thus reduce the amount of loan fund cancellation. MOHSA staff pointed out that it would be difficult to implement it with only one month left before the Closing Date.

6. Disbursements could continue to April 30, 1995, four months after the Closing Date, if the Bank would grant for this purpose, a 4-month grace period. The mission would recommend to the Bank to grant this 4-month grace period for miscellaneous eligible expenditure disbursements. The mission also pointed out to MOHSA that while the residual amount of funds in the Special Account may have been too small (due to Bank's recovery of funds from Special Accounts towards the time of Closing Dates) for payments of equipment contracts, be they awarded through ICB procedure or other procurement procedures, MOHSA can still use Form 1903 for direct payment to suppliers and solve the lack of funds problem in the Special Account. A direct payment Form 1903 sample was presented to MOHSA.

7. Implementation Completion Report (ICR) was discussed, and MOHSA was referred to para 7 of the last Aide Memoire dated May 21, 1994 and Annex 2 of the Aide Memoire dated November 25, 1993 on Bank's requirements. The mission requested MOHSA to send its own evaluation report on Loan 3330-KO to the Bank before March 31, 1995. Ms. S. Szabo, IBRD staff, joined the mission for five days between November 28 and December 3, 1994 for ICR work under separate terms of reference. Her activities included, among others, checking on achieving project development objectives. The information gathered will be used to prepare the Bank's part of the ICR, a draft of which will be sent to MOHSA in January 1995 for comments.

Public Hospital Modernization Project under Loan 3516-KO

8. The mission noted with pleasure that further significant progress has been made since last mission in May, 1994. Requests for equipment procurement sent to OSROK have reached 100% of the amount of loan proceeds for this project; contracts awarded have exceeded 50%, and disbursements have exceeded one third.

9. The implementation plan for the next two years before the Closing Date of the Loan is also satisfactory. It is expected that procurement for the $30 million planned in total would be achieved; disbursements would reach about $30 million; and cancellation of loan amounts unused, if any, would be insignificant. There is no need for an extension of the Closing Date.

10. The mission reviewed the progress of the four health policy research studies being carried out by the Korea Institute of Health and Social Affairs, the Korea Institute of Health Services Management, and the School of Public Health at Seoul National University. Progress is satisfactory and results of one of the studies (National Health Expenditures) are already available in published form in English and Korean. Results of the other three studies would be available in 1995. The mission recommended to MOHSA that steps be taken towards establishing a formal system of national health accounts with regular and systematic collection of data on national health expenditures. The mission noted that health care reform is part of the present political agenda with initiatives to improve the efficiency, quality and equity of the Korean health care delivery system.

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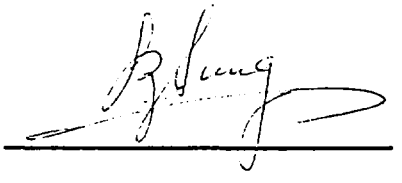

Mr. Willy De Geyndt, Task Manager
for these two projects

Sing Zak Sung
Consultant, IBRD

December 5, 1994

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Chief
Population and Human Resources Division
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June 9, 1995

Dear Mr. J. Shivakumar

Re : ICR on Loan 3330 - KO

It is my pleasure to forward the comments and evaluation on the Implementation Completion Report for the IBRD Health Technology Project (3330 - KO) as attached.

Thank you for your continued cooporation.

Sincerely yours,

Rhie, Dong Mo, M.D., Ph.D

Director General
Medical Affairs Bureau
Ministry of Health and Welfare
Republic of Korea

Encl : As stated

Comments and Evaluation on The Implementation Completion Report (Loan 3330-KO)

Prior to making my comments on the Implementation Completion Report(ICR), I would like to take this opportunity to thank staff of IBRD who put their best efforts in implementing of the Health Technology Project (IBRD 3330-KO).

The Comments and Evaluation on the ICR are as follows:

Firstly, I perfectly agree with the ICR which IBRD has prepared. It describes the whole implementation process for this project very precisely and analytically.

Secondly, it should be noted that this project was well developed by focusing on equity and efficiency which the Korean government has regarded as very important factors in terms of Korean medical services provision. In particular, the objectives of this project were set up on the basis of equity on medical resource distribution among eight medical regions. Also, as the whole procurement process was centralized in the Office of Supply, Republic of Korea, and Korea Exchange Bank, the efficiency was always achieved. Even though MOHW Staff participated in this project did not have any experience with IBRD Project, there were no difficulties in the procurement for biomedical equipment.

Thirdly, regarding the medical environment in Korea, medical services are mostly provided by private nonprofit hospitals as mentioned in ICR. However, it was not easy for the nonprofit hospitals to access bank loans with good conditions like the IBRD Loan. Therefore, most of the selected hospitals appreciated the loan. Moreover, considering the financial status of the selected hospitals for this project, it will be no problem to amortize the principle and interest of the loan. This is because of the strict criteria used to select hospitals according to the loan agreement. It means that this project has been carried out under the strict management of the Korean government. In addition, it was good sense to adopt a negative equipment list for procurement to prevent increasing National Health Expenditure.

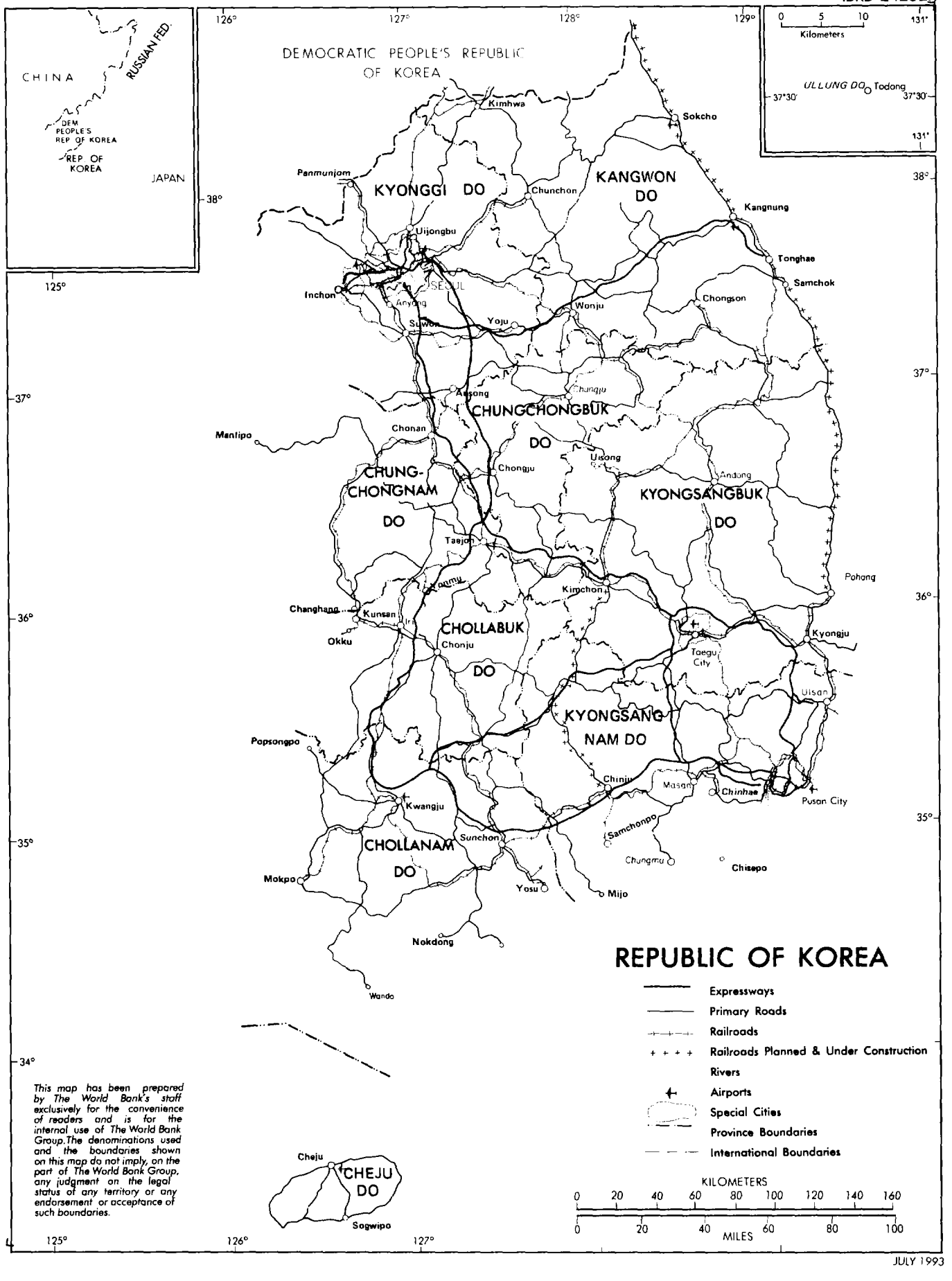
In conclusion, this project outcome is satisfactory and its achievement sustainable. All equipment procured by this project has been installed and is working in good conditions. We evaluate that the objectives of this project have been achieved. Also, the lessons learned from this project will be utilized for the implementation of IBRD 3516-KO project.

Finally, some correction for figures in ICR should be made. On page iii, 4.9 percent is correct instead of 4.4 percent because US$ 2.9 million was cancelled in this project. On page 13, Table 6A, Actual/latest estimate for Equipment should be 57.0 instead of 57.4. In addition, Table 6A, Actual/latest estimate from IBRD should be 57.0 instead of 57.4.

Rhie, Dong Mo M.D.,Ph.D.

Director General
Medical Affairs Bureau
Ministry of Health and Welfare
Republic of Korea

IBRD 24232R



REPUBLIC OF KOREA

- Expressways
- Primary Roads
- Railroads
- Railroads Planned & Under Construction
- Rivers
- Airports
- Special Cities
- Province Boundaries
- International Boundaries

KILOMETERS 0 20 40 60 80 100 120 140 160

MILES 0 20 40 60 80 100

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JULY 1993

IMAGING

Report No: 14710
Type: ICR